INVESTR

Requirements Analysis Documentation

Team LAST
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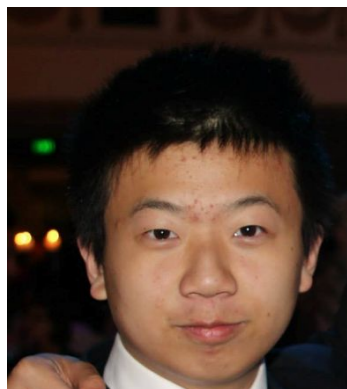
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Tables of Contents

Requirements Analysis Documentation (RAD)

1. Introduction

1.1 Purpose of the system

The main purpose of this project was to produce a stock market game that acts as a simulator for people who are prospective investors wanting to make some money. This game allows these prospective investors to learn about the risks and benefits that the share market could offer but in a safe risk free environment as they won't lose any real money. The game is called INVESTR which sounds exactly like the word *investor* but without the letter 'o'.

1.2 Scope of the system

INVESTR is a web-based stock market game where players are able to buy and sell shares from actual existing stock market companies. The currency used in this game is completely bogus so it will never use real money. The main goal of the game is generate as much money as possible from investing in purchasing and selling of shares. There is a leaderboard that displays the highest ten players with the most amount of bogus money earned in the game. A registered account is required to play the game but it is completely free.

1.3 Core System Functionalities

The application must be able to:
- Allow users to register an account to enter the game
- Allow existing users to log into their own accounts
- Provide live stock data when searched, pulled from the Yahoo Finance API
- Provide an easy and comfortable user interface to navigate around the website
- Allow users to purchase shares if they have the available amount of money
- Allow users to sell shares to earn money
- Allow users to be able to check their transaction history
- Provide a graph that tracks the movement of share prices
- Allow users to view their current balance and current stock values that they own
- Provide a list of average prices of shares in possession and the current number of shares held
- Allow users to add friends and the ability to chat with them

1.4 Objectives and Success Criteria of the Project

The success of the stock market game website depends upon meeting the following core set of objectives:

- The design of the UI that allows for an easy to follow and comfortable experience throughout the website
- The design of the purchasing and selling shares interface.
- The design of the leaderboard to show a list of the top players
- The design of a page that lists the available stock market companies that can be searched
- The design of the profile page that allows the user to chat with friends on the same page.

1.5 Definitions, Acronyms and Abbreviations

Important terms and concepts are listed here. More will be added by the project teams.

Stock market   A place where shares of publicly listed companies are exchanged.

ASX   Australian Securities Exchange

Shares   Units of ownership interest in a corporation or financial asset that provides for an equal distribution in any profits in the form of dividends.

Dividend   A distribution of a portion of a company's earnings, decided by the board of directors, to a class of its shareholders.

UI   User Interface

Model   A schematic description of a system that accounts for its known or inferred properties [http://www.answers.com]

Game   Game refers to INVESTR

Profile   Profile pages of users that display their account details

Stock   A type of security that signifies ownership in a corporation and represents a claim on part of the corporation's assets and earnings

Leaderboard   A list of the top players with the highest amount of money in the game during a certain period

Brokerage cost   A fee charged by an agent or agent's company to conduct transactions between buyers and sellers.

API   A set of functions and procedures that allows the creation of applications which access the features or data of an operating system, application, or other service [http://www.answers.com]

1.6 References

- http://www.investopedia.com/terms/s/stockmarket.asp
- http://www.investopedia.com/terms/s/shares.asp
- http://www.investopedia.com/terms/d/dividend.asp
- http://www.asx.com.au/
- http://www.investopedia.com/terms/s/stock.asp
- http://www.investopedia.com/terms/b/brokerage-fee.asp

2. Current System

The current system of the website allows users to register as a stock market player and existing users are able to login to their accounts. Users are able to search for shares in the sharemarket page which lists the ticker symbol of the company, the name of the company, the amount of volume it currently has, and their previous trade amount. The auction page shows a list of the shares that users are able to search for. The leaderboard page displays the top players with highest amount of money for a certain period. Users are able to go to their profile page to view their account details including their current balance. Users are able to search and add friends. When users have become friends, they are able to chat with one another through the profile page. The admin of the website is able to view all of the existing accounts and their details. The admin has the ability to ban players if they are found to be cheating.

3. Proposed System

3.1 Overview

This section provides a functional overview of the system. This will again be properly divided into two sections.

3.2 Functional Requirements

- Players must be able to buy shares if they have the required amount of money
- Players must be able to sell shares if they currently own them
- The score on the leaderboard should be based on the total of money that players currently possess
- The game must support transactions for the buying and selling of shares
- Players must be able to view their transaction history with specified dates
- The website must have a graph that tracks the movement of share prices

3.3 Non Functional Requirements

3.3.1 Usability

- The game must be playable with a mouse
- Each user must be given $1,000,000 initially at the beginning of the game
- The 'Contact Us' page must be accessible at any point during the website in case there are errors or attention needed to notify the admin.
- The game brokerage costs should be made up of two parts; a fixed cost ($50) and a charge that is a percentage of the sale or purchase (0.25% for the sale and 1% for the purchase) that may be lowered when high volumes are traded
- Users must not be able to purchase shares if they do not have the required amount of money

3.3.2 Reliability

- Components of the project code shall be tested alongside the implementation phase to ensure that they are functional
- The final version of the website shall be tested by matching up with the functionality requirements and testing each functionality specifically to make sure everyone works well.

3.3.3 Performance

- Searching for shares to buy must be smooth and quick without any delays or lag
- The data from the graph must be consistent and being pulled correctly from the Yahoo Finance API
- The chat system must be able to show messages at real time
- The share data being pulled from the Yahoo Finance API must always be up to date and running smoothly

3.3.4 Supportability

- The website must be able to run on any internet browser and on any computer or mobile device

3.3.5 Implementation

- The project will be implemented by using Meteor, Javascript and HTML, and deployed as a website
- The API used is the Yahoo Finance API which is provided for public use to display data of shares freely

3.4 System Models

3.4.1 Scenarios

Scenario 1 - Registering for an account
- A user first enters the website
- A user does not have an account and proceeds to register for an account
- The user enters their email, password, display name and chooses their account type (normally it would be default)
- The user has successfully created an account

Scenario 2 - Existing user returning
- A user enters their existing username and password to login
- The user logins in successfully
- The user is redirected to the main dashboard and is greeted with a 'Welcome' message

Scenario 3 - Searching for shares
- The registered user navigates to the sharemarket page
- The user searches a certain ticker symbol e.g. YHOO
- The API checks the symbol entered and displays the corresponding requested data
- The Yahoo company's share is displayed showing the name, amount of volume they currently have and their previous trade amount.

Scenario 4 - Adding friends and chat
- The registered user is able to search for existing users to add as friends.
- The user clicks the 'Add Friend' button
- A friend request is sent to the other user
- The other user has to option to accept or decline the request
- If the user declines the request, they users won't be friends
- If the user accepts the request, they become friends
- Both users are now able to chat in the chat box.
- Messages will be displayed in real time and will be stored even from previous conversations

Scenario 5 - Admin functions
- The admin logins in with their username and password
- The admin gains the ability to view all existing users account details including email, name, amount of money they own
- The admin is able to ban players if they are reported for cheating or harassing other players

3.4.2 User interface - navigational paths and screen mock-ups

The login page where existing users login to the website/game.

Users who do not have an existing account enter their details to create an account to gain access to the website.
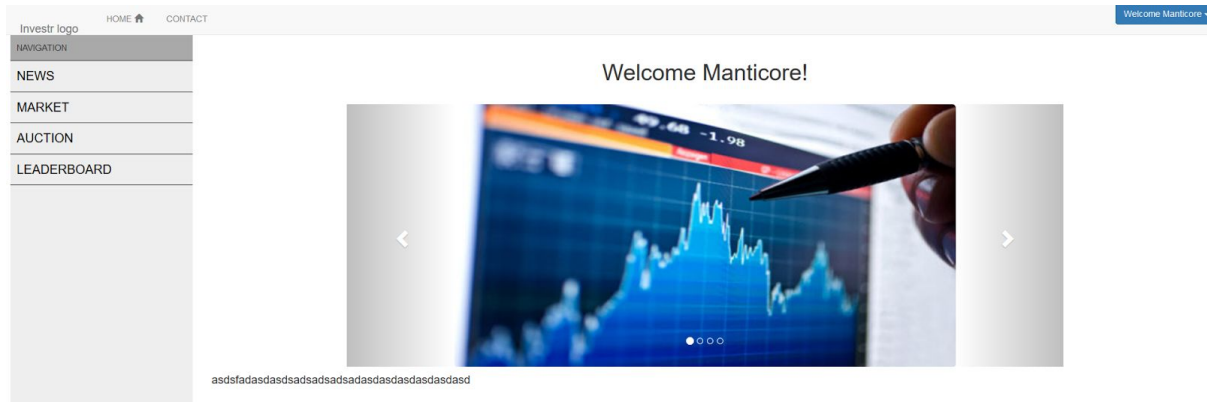
After logging in successfully with an existing account, the user is greeted with a 'welcome' message and redirected to the dashboard page.

Users are able to search for shares. If a recognised ticker symbol is searched, the data will be successfully pulled from the API and displayed within seconds. For example, entering YHOO will retrieve the Yahoo! Inc. share data.

NAVIGATION

NEWS

MARKET

AUCTION

LEADERBOARD

List of Stock Tickers

Ticker Symbol	Name of the Company
2 VATSAEDU.BO	VATSA EDUCATIONS LTD.
3 RES.TO	Rare Element Resources Ltd.
4 WELLNESS.BO	WELLNESS NONI LTD.
5 WNGRF	George Weston Limited
6 ECV.L	Eco City Vehicles plc
7 RXNRP	REX ENERGY CORP
8 HAL	Halliburton Company
9 MCF	Contango Oil & Gas Company
10 ADRO.JK	ADARO ENERGY TBK IDR100.
11 CASS	Cass Information Systems, Inc.

The auction page will have a list of stock tickers that users are able to search for. The ticker symbol corresponds to a certain company where the API can read and display data to the website respectively.

Invesit logo

HOME 🏠   CONTACT

NAVIGATION

NEWS

MARKET

AUCTION

LEADERBOARD

Current Leaderboard

No.	Name	Current Portfolio Value
1	Manticore	$100000
2	Test3	$2000
3	Test2	$10000
4	Son Goku	$100000
5	Alex Panetta	$100000
6	Mikehunt	$100000
7	Admin	$
8	Saitama	$100000

The leaderboard page shows the top players with the current highest amount of money that they currently own. In this case only 8 players are registered show it is showing the top 8 players.

The 'Contact Us' page allows users any issues or queries which will be sent straight to the administrator of the website. Only then will the admin take further action upon the issue or request.

The profile page displays the user's name, email and current balance. Users are able to add friends and search for users to add.

Friends

- Saitama
- Son Goku
- Test2

Chat here! [   ]

Manticore: hey there
Son Goku: hi
Son Goku: what is up
Manticore: nothing u
Son Goku: just trying to take a dump but i turn super saiyan when i do that
Manticore: well that aint good, try to relax i suppose
Manticore: hi
Son Goku: asdsad
Manticore: hello
Son Goku: hey

Users who have added each other as friends will be able to chat with one another. The messages are received in real time and previous conversation history is saved.